

## CLAIMS

1. An electrical power supply system (1) for an electrically powered motor vehicle, said vehicle including an electric motor (3), a transmission device for transmitting energy between the drive wheels (2) and the motor (3), and electrical accessories (4), in particular an air-conditioning device, said system (1) comprising a first rechargeable battery (5) serving to power the electric motor (3) and a second rechargeable battery (6) serving to power the electrical accessories (4) of the vehicle, said system being characterized in that the first battery (5) and the second battery (6) are connected in parallel to said motor (3) via a switch device, said switch device being arranged to switch the current for powering the motor (3) between the batteries (5, 6) as a function of at least one energy threshold.
2. A system according to claim 1, characterized in that the first battery (5) is a battery of the Lithium-ion or Lithium-ion-polymer type.
3. A system according to claim 1 or claim 2, characterized in that the second battery (6) is a battery of the Lithium-metal-polymer type.
4. A system according to any one of claims 1 to 3, characterized in that the first battery (5) is capable of delivering power lying approximately in the range 40 kW to 55 kW.
5. A system according to any one of claims 1 to 4, characterized in that the second battery (6) is capable of delivering power of about 15 kW.
6. A method of controlling an electrical power supply system (1) for an electrically powered motor vehicle according to any one of claims 1 to 5, said method being characterized in that it consists in:
  - acting, when the energy delivered by the first battery (5) is greater than a discharge energy threshold, to cause the motor (3) to be powered by the first battery (5) so as to drive the drive wheels (2) via the transmission device; and
  - acting, when the energy delivered by the first battery (5) is less than the discharge energy threshold, to activate the switch device so as to cause

the motor (3) to be powered by the second battery (6), and so as to drive the wheels (2) via the transmission device.

7. A method according to claim 6, characterized in that it further consists in:
- 5       - acting, when the energy necessary for the motor (3) is greater than a low energy threshold, to cause the motor (3) to be powered by the first battery (5) so as to drive the drive wheels (2) via the transmission device; and
  - 10       - acting, when the energy necessary for the motor (3) is less than the low energy threshold, to activate the switch device so as to cause the motor (3) to be powered by the second battery (6) and so as to drive the wheels (2) via the transmission device.
8. A method according to claim 6 or claim 7, characterized in that it further consists in acting, in the event of deceleration, to cause the switch device to be activated so as to deliver a recharging current essentially to the first battery (5) by transmission of energy from the wheels (2) to the motor (3).
- 15   9. An electrically powered motor vehicle including electrical accessories (4), said motor vehicle being characterized in that it includes an electrical power supply system (1) according to any one of claims 1 to 5.